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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,148	07/10/2003	Bruce Gregory Warren	895,080-014	1394
34263	7590	12/29/2004	EXAMINER	
O'MELVENY & MEYERS 114 PACIFICA, SUITE 100 IRVINE, CA 92618			MEW, KEVIN D	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/617,148	Applicant(s) WARREN ET AL.	
	Examiner Kevin Mew	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/10/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Specification

1. The disclosure is objected to because of the following informalities:

In line 1, page 1 of the specification, please enter US Utility Application No. 10/612753 as an application that claims priority to US Provisional Application 09/393,164.

Appropriate correction is required.

Claim Objections

2. Claims 1-5 are objected to because of the following informalities:

In line 9, claim 1, the abbreviated term "ALPA" should be rewritten as a complete form to represent what it stands for.

In line 3, claims 2 and 4, each of the abbreviated terms "ARB," "OPN" and "CLS" should be rewritten as a complete form to represent what it stands for.

In line 15, claim 3, the abbreviated term "ALPA" should be rewritten as a complete form to represent what it stands for.

In lines 1-2, claim 5, each of the abbreviated terms "R_RDY" and "OPN" should be rewritten as a complete form to represent what it stands for.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Coffey (US Publication 2002/0044561).

Regarding claim 1, Coffey discloses a Fibre Channel Arbitrated Loop interconnect system comprising:

a first port (output of Disk 0 of Cross-Point Switch CPS, see entire paragraph 0095),
a second port (output of Disk 1 of Cross-Point Switch CPS, see entire paragraph 0095),
said first and second ports including port logic to monitor certain arbitrated loop primitives (each loop port arbitrates for access to the loop by performing loop initialization, assigning Loop Physical Address AL_PA, providing notification that the configuration may have changed, and transmitting Arbitrate (ARBX) Primitive signal to the next node in the loop, see entire paragraphs 0064 and 0065),

a crossbar switch coupled to said first and second ports (Disk 0 is connected to CPS input A and Disk 1 is connected to CPS input B, see entire paragraph 0095),

a route determination apparatus (a hub) including a routing table (a hub comprises arbitrated loops in which each loop is initialized with a series of loop initialization frames, see entire paragraph 0064 and Fig. 1; note that the series of loop initialization frames is considered

as the routing table) consisting of AL_PA addresses and their associated ports (the loop initialization process comprises associating AL_PA addresses to the ports and to the frames transmitted between ports, see entire paragraphs 0064 and 0056), the route determination apparatus coupled to each port and the crossbar switch (the hub comprises a cross-point switch and the cross-point switch is connected to input A and input B, see entire paragraphs 0031 and 0095 and Fig. 5),

whereby the crossbar switch creates paths (CPS makes connection between ports, see entire paragraph 0104, lines 12-14) between the ports based on arbitrated loop primitives (based on the OPN primitive, see entire paragraph 0068).

Regarding claim 2, Coffey discloses the interconnect system of claim 1 whereby the arbitrated loop primitives that cause the crossbar switch to create paths between ports includes one or more of the following: ARB, OPN and CLS (see entire paragraphs 0068 and 0063).

Regarding claim 3, Coffey discloses a system for interconnecting Fibre Channel Arbitrated Loop devices comprising:

a first Arbitrated Loop containing one or more Fibre Channel arbitrated loop devices (Loop A contains Disk 0, see Fig. 1),

a second Arbitrated Loop Device (Loop B contains Disk 1, see Fig. 1),

a Fibre Channel Arbitrated Loop interconnect system (a fiber channel arbitrated loop interconnect system, see entire paragraph 0030 and Fig. 1), the interconnect system including:

a first port containing port logic coupled to the first Arbitrated Loop (each loop port on the loop is capable of starting loop initialization by entering the initializing state and transmitting one of the Loop Initialization Primitive LIP sequences, see paragraph 0064, lines 7-9),

a second port containing port logic coupled to the second Arbitrated Loop (each loop port on the loop is capable of starting loop initialization by entering the initializing state and transmitting one of the Loop Initialization Primitive LIP sequences, see paragraph 0064, lines 7-9),

route determination apparatus for selecting a route between ports (a hub comprises routines for performing loop initialization for each ports, see entire paragraph 0064),

the said route determination apparatus selecting routes (a hub comprises routines for performing loop initialization, see entire paragraph 0064) based on received Fibre Channel Arbitrated Loop primitives from the ports (each loop port arbitrates for access to the loop by performing loop initialization, assigning Loop Physical Address AL_PA, providing notification that the configuration may have changed, and transmitting Arbitrate (ARBX) Primitive signal to the next node in the loop, see entire paragraphs 0064 and 0065) and including a routing table (a hub comprises arbitrated loops in which each loop is initialized with a series of loop initialization frames, see entire paragraph 0064 and Fig. 1; note that the series of loop initialization frames is considered as the routing table) containing ALPA addresses and their associated ports (the loop initialization process comprises associating AL_PA addresses to the ports and to the frames transmitted between ports, see entire paragraphs 0064 and 0056),

connectivity apparatus (CPS, see element 30, Fig. 1) coupled to the first and second ports (Disk 0 is connected to CPS input A and Disk 1 is connected to CPS input B, see entire

Art Unit: 2664

paragraph 0095) and to the route determination apparatus (hub) for switching frames between ports under control of the route determination apparatus (a hub comprises arbitrated loops in which each loop is initialized with a series of loop initialization frames to be transmitted between ports, see entire paragraphs 0064 and 0056 and Fig. 1) the said connectivity apparatus is a crossbar switch (CPS, see element 30, Fig. 1), whereby Fibre Channel frames are transferred between a device on the first Arbitrated Loop and the second Arbitrated Loop Device (see entire paragraph 0031).

Regarding claim 4, Coffey discloses the interconnect system of claim 3 whereby the Arbitrated Loop primitives that cause the crossbar switch to create paths between ports includes one or more of the following: ARB, OPN and CLS (see entire paragraphs 0068 and 0063).

Regarding claim 6, Coffey discloses the interconnect system of claim 3 whereby the second Arbitrated Loop device is on the first port (Loop B is coupled to the output of Disk 0, see Fig. 1).

Regarding claim 7, Coffey discloses the interconnect system of claim 3 whereby the second Arbitrated Loop device is on the second port (Loop B is coupled to the output of Disk 1, see Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coffey.

Regarding claim 5, Coffey discloses all the aspects of the claimed invention set forth in the rejection of claim 3 above, except fail to explicitly show the interconnect system of claim 3 including a R_RDY counter to count R_RDY'S sent by the originating Fibre Channel Arbitrated Loop device before the OPN response is received by the originating Fibre Channel Arbitrated Loop Device. However, Coffey discloses a R_RDY primitive indicates that an interface buffer is available for receiving frames continuously until something causes the current state to change (see paragraph 0055, lines 15-20). Coffey further discloses is the OPN primitive is used for opening the connection between the transmitter port and the receiver port (see entire paragraph 0068). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of using the R_RDY primitive with the teaching of using the OPN primitive such that the value of the R_RDY primitive will be counted to indicate in the event that the receiver is ready to receive data frames before the originator will receive any opening connection response from the receiver. The motivation to do so is to avoid consuming resources to open connection between two ports unnecessary when the receiver is not yet ready to receive further data frames from the originator.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure with respect to method and apparatus for switching fiber channel arbitrated loop systems.

US Publication 2002/0044562 to Killen Jr. et al.

US Patent 5,991,891 to Hahn et al.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'W. Chin', with a horizontal line extending to the right.